# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



# SUBSURFACE INVESTIGATION

STATE JOB NO.	020419		
FEDERAL AID PROJEC	CT NO	STPR-0040(23)	
	WELLS	BAYOU STR. & APPRS. (S)	
STATE HIGHWAY	54	SECTION	3
IN		LINCOLN	COUNTY
LETTING OF		FEBRUARY 10, 2016	

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

### SOIL TYPES

(SHOWN IN SYMBOL COLUMN) (PREDOMINANT TYPE SHOWN HEAVY)





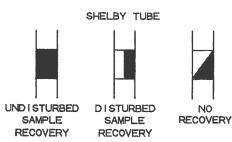






ORGANIC MATTER

## SAMPLER TYPES (SHOWN IN SAMPLE COLUMN)



ROCK TYPES (SHOWN IN SYMBOL COLUMN)





or

SILTSTONE



OF

DOLOMITE

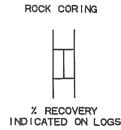


LAYERS of SHALE and

SANDSTONE



SPLIT SPOON **RECOVERY** RECOVERY



# TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANU	LAR SOIL		CLAY	CLA	Y-SHALE	SHALE					
*Nº Value	Density	'N' Value	Consistency	*N* Value	Consistency	'N' Value	Consistency				
0-4 5-10 11-30 31-50 Over 50	Very Loose Loose Medium Dense Dense Very Dense	0-1 2-4 5-8 9-15 16-30 31-60 Over 60	Very Soft Soft Medium Stiff Stiff Very Stiff Hard Very Hard	0-1 2-4 5-8 9-15 16-30 31-60 0ver 60	Very Soft Soft Medium Stiff Stiff Very Stiff Hard Very Hard	More than Penetrati	on vs: Medium Hard 2' on				

- 1. Ground water elevations indicated on boring logs represent ground water elevation at date or time shown on drilling log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
- 2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
- 3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test - Driving a 2.0' O.D., 1-3/8' I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30.0 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6.0 inches of penetration on the drill log (The 'N' Value can be obtained by adding the bottom two numbers (i.e.  $\frac{6}{100}$ , 8+9 = 17 blows/ft). Unless otherwise noted on the

drill log, the Standard Penetration Test was performed utilizing a Central Mine Equipment (CME) automatic hammer.

No.						BORING NO. 1								
JOB N		020419 Lincoln County		PAGE 1 OF 2  DATE: August 9-10, 2005										
JOB N			Wells Bayou Str. & Apprs.		DATE: TYPE OI	ז מרו				10, 2 Cotar		ach		
			S.H. 54		TITEO	DICE	LLING.		1	Cotai	y 17 1	4311		
STATI	STATION: 19+20 EQUIPMENT: Failing 1500 w/ Dietrich											h		
LOCA	TION:		14' Right of Center Line of Construction							atic I				
					LOGGED	BY:		R	licha	ard N	/larti	n		
COMPLETION DEPTH: 61.3														
D	s	S												
E P	Y	A M							H	Ø		%	%	
T	М	P	DESCRIPTION OF MATERIAL					표	J.	ŊŎ.		S	R	
Н	ВО	L			CI	ST.		ĕ	2	BI	Ż	C R	Q D	
	L	E			PLASTIC LIMIT	% MOIST	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	ı	D	
FT.	~~~	S	SURFACE ELEVATION: 169.0		지그	%	55	ă	7	ž	PE			
5			Moist, Soft, Brown Sandy Clay with Traces of											
			Gravel				į							
10										,				
		XI								2.	-1			
			Wet, Soft, Brown Sandy Clay with Traces of							_	•			
			Gravel *	!										
— —														
15											,			
		X									5			
										Ĭ.				
			Moist, Stiff, Brown and Gray Sandy Clay *											
20														
		X								3	2			
			Moist, Medium Stiff, Reddish Brown and Gray								•			
			Clay with some Sand *											
25	1						1				2			
		X	×.								3-4			
		T	ALLE AND TO THE PARTY OF THE PA							,	-			
			Moist, Medium Stiff, Reddish Brown Clay *											
30	1										1			
<u> </u>		X								4	-5			
			Maint Citiff Danium and Const. Co. 1. Ct. 1											
			Moist, Stiff, Brown and Gray Sandy Clay *											
35 REM	V D K	<u></u>	" nine casing was utilized to a don'th of 4.01.11-1-	ا المما	1.0'	A =				.,,,,				
· *=141/	11 11 16	0	" pipe casing was utilized to a depth of 4.0'. Hole cavidrely called the called to the called the called to the called the calle	veu in (( 0'.	, 4.∪` a	ı CO	ripiet	ION C	or ar	ming	j. <sup>-</sup> [	יוווויזע	g	

JOB NO.   C20419   Lincoln County   Li	***							BORING NO. 1 PAGE 2 OF 2							
Wells Bayou Str. & Appres. S.H. 54 STATION: 19+20 LOCATION: 14' Right of Center Line of Construction  COMPLETION DEPTH: 61.3 DESTRIPTION OF MATERIAL H B L L L L L L L L L L L L L L L L L L															
STATION: 19+20   LOCATION: 14' Right of Center Line of Construction   SQUEMENT:   Failing 1500 w/ Dietrich Automatic Hammer   Richard Martin	JOB N	AME:		Wells Bayou Str. & Apprs.											
LOCATION: 14' Right of Center Line of Construction    COMPLETION DEPTH: 61.3   Completion   Comp															
LOGGED BY: Richard Martin   COMPLETION DEPTH: 61.3   SOIL   SOI															
COMPLETION DEPTH: 61.3   SOIL   CROWP   SOIL   CR	LOCK	11014.		14 Hight of Center Line of Construction		LOGGE	BY:								
P	COM														
DESCRIPTION OF MATERIAL   SOIL GROUP   SOI		S							[+C]						
T H B L SOLL GROUP STANDARD SOLL GROUP STANDAR	P	Υ		DESCRIPTION OF MATERIAL					L	Ę.	۸S			%	
23   31-35     40   45     45     60   (3")     60   (4")     60   (4")     70     8     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70       8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8     8   (4")     70     8   (4")     70     8   (4")     70     8     8   (4")     70     8     8     8     8     8     8     8	Т		Р	DESCRIPTION OF MATERIAL					HSI	C	LOV				
23   31-35     40   45     45     60   (3")     60   (4")     60   (4")     70     8     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70       8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8   (4")     70     8     8   (4")     70     8   (4")     70     8   (4")     70     8     8   (4")     70     8     8     8     8     8     8     8	Н	0	닏			STIC	USI	61	WE	PER	OF B	NI-9			
40.  45.  45.  Wet, Very Dense, Brown Sand  50.  50.  Wet, Very Dense, Brown Sand  13.  32.64  36.60 (5°)  60.60 (6°)  Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  65.  60.60 (4")	FT.	L	S	SURFACE ELEVATION: 169.0		PLA	% W	LIQU	DRY	LBS	NO.	PER			
40 45 45 50 Wet, Very Dense, Brown Sand  13 32-64  860 (5")  Wet, Very Dense, Brown Sand with Pea Gravel Boring Terminated  45 60-80 (4")  REMARKS: 6" pipe casing was utilized to a depth of 4.0". Hole caved in to 4.0" at completion of drilling. * Drilling			X												
19   27-44											31-	-35			
19   27-44															
19   27-44	40														
Wet, Very Dense, Brown Sand    So	40										1	9			
22   36-34	Ħ		$\triangle$								27-	44			
22   36-34															
22   36-34															
Wet, Very Dense, Brown Sand    36-34	45										2	,	.		
50  31 32-64  55  60  Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  45 60-60 (4*)  Boring Terminated  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling			$\triangle$												
50  31 32-64  55  60  Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  45 60-60 (4*)  Boring Terminated  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling				Wet. Very Dense. Brown Sand			:								
To the second state of the				, ,											
32-64  32-64  33-64  60  (5'')  45  60-60  80-60  80-60  90-60  80-60  90-60  80-60  90-60  80-60  90-60  90-60  90-60  80-60  9	50														
55  60 (5")  Wet, Very Dense, Brown Sand with Pea Gravel Boring Terminated  85 65 65 70 REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling			X												
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  Boring Terminated  65  67  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling											U.	0.			
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  Boring Terminated  65  67  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  Boring Terminated  65  67  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling	55														
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  65  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling			$\boxtimes$												
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  65  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  65  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
Wet, Very Dense, Brown Sand with Pea Gravel  Boring Terminated  65  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
Boring Terminated  65  70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling	60	0.00	$\nabla$	Wet Very Dense Brown Sand with Dog Grovel							4	5			
65 70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling		::68::									60-	-60 ")			
70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling				Total Statement											
70  REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling	65														
REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling															
REMARKS: 6" pipe casing was utilized to a depth of 4.0'. Hole caved in to 4.0' at completion of drilling. * Drilling	70														
	REMA	ARKS	S: 6	" pipe casing was utilized to a depth of 4.0'. Hole cavirculation fluid loss was encountered from 6.5' to 35.	ed in to	4.0' a	t co	mplet	ion o	of dr	illing	j. * C	rillin	g	

ARK/ MATI		BORING NO. 2 PAGE 1 OF 3											
JOB N			020419 Lincoln County		DATE: August 8-9, 2005								
JOB N	AME:		Wells Bayou Str. & Apprs. S.H. 54	TYPE OF DRILLING: Rotary Wash									
STATI	ION:		20+05		EQUIPM	ENT:	·	ailir	ng 15	500 v	v/ Di	etricl	h
LOCA	TION:		14' Left of Center Line of Construction							atic F			_
0017	DI DI	10)			LOGGEI	BY:	·	]	Rich	ard N	/arti	n	
D		S	DEPTH: 86.5				1	T					
E	S	A											
P	Y M	М	DESCRIPTION OF MATERIAL	207				H	FT.	WS		%	%
T	В	Р	DEGOTAL FIGHT OF WIATERIAL	SOIL GROUI	, I.	ا ا		IGH IGH	CC	LO	٠.	S C	R Q
Н	.0	L			1≌	SIC	9 +	WE	PER	)F B	ZI-S	R	Ď
FT.	L	S	SURFACE ELEVATION: 169.1		PLASTIC LIMIT	% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS	PER 6-IN.		
	N					0			H		124		
5													
		$\nabla$	Moist, Stiff, Reddish Brown Sandy Clay							4	<u> </u>		
		$\triangle$								4-	5		
10													
		$\bigvee$								1			
		$\triangle$								1-	2		
			Wet, Very Loose, Gray Sand with some Clay and										
			Traces of Organic Matter										
15													
		$\bigvee$											
		$\triangle$								2-	.3		
			Wet, Medium Stiff, Gray and Brown Clay										
			•										
20													
		$\bigvee$								3.	2		
		$\leftarrow$								3.	-3		
			Moist, Medium Stiff, Gray Sandy Clay										
25													
		$\bigvee$									3		
		$\hookrightarrow$				[				4-	.5		
			Malat Offic Court Of the Court										
			Moist, Stiff, Gray Clay with some Sand			Ì							
30													
		X									_		
		$\hookrightarrow$								5-	.9		
			Wat Madium Days O . O .										
			Wet, Medium Dense, Gray Sand										
35			5" pipe casing was utilized to a depth of 4.0'. Hole cay										

MATERIALS DIVISION - GEOTECHNICAL SEC.   PAGE 2 OF 3	ARKANSAS HWY. & TRANS. DEPARTMENT						BORING NO. 2									
Wells Bayou Str. & Appres. STATION: LOCATION: SH. 54 20+05 14' Left of Center Line of Construction COMPLETION DEPTH: 86.5  D S S A P M P M M P D L E FT. L S SURFACE ELEVATION: 169.1  Wet, Very Dense, Brown and Gray Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces o																
STATION: 20-05 LOCATION: 14 Left of Center Line of Construction  COMPLETION DEPTH: 86.5  Description of MATERIAL T B P M P M P M P M P M P M P M P M P M P				•	- 1											
STATION: 20+05 LOCATION: 14 Left of Center Line of Construction  COMPLETION: DEPTH: 86.5  D S S A P P M M P. H D L E SURFACE ELEVATION: 169.1  Wet, Very Dense, Brown and Gray Sand with Some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Trac	10B N	AWE.		* * * * * * * * * * * * * * * * * * * *		TYPE OF DRILLING: KOTATY WASH										
LOCATION: 14' Left of Center Line of Construction  COMPLETION DEPTH: 86.5  DESTRICTION DEPTH: 86	STATI	ON:				FOURMENT: Failing 1500 w/ Dietrich										
D S S A P M M P DESCRIPTION OF MATERIAL GROUP I SOIL GROU						EQUI III	2141.	•						•		
D S S A P M M P DESCRIPTION OF MATERIAL GROUP I SOIL GROU						LOGGEI	BY:		F	Cich:	ard N	lartii	1			
E P Y M P T M P T M P	COM	PLET	ION	NDEPTH: 86.5												
DESCRIPTION OF MATERIAL SOIL GROUP THE BLUEFT. SURFACE ELEVATION: 169.1  Wet, Very Dense, Brown and Gray Sand with Some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Gravel	D	٥														
DESCRIPTION OF MATERIAL   SOIL GROUP   SOI	E										70			0,		
Wet, Very Dense, Brown and Gray Sand with Some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel		М		DESCRIPTION OF MATERIAL	SOIL				HT	U.F	MC.					
Wet, Very Dense, Brown and Gray Sand with Some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel					GROUP	ည	ST.		EIG	R C	BL	ż				
Wet, Very Dense, Brown and Gray Sand with Some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel						AST	MOI	24	Υ×	S PE	. OF	R 6-	K	ע		
Wet, Very Dense, Brown and Gray Sand with some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Gravel  To Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	FI.		S	SURFACE ELEVATION: 169.1		되김	%	35	DR	LB						
Wet, Very Dense, Brown and Gray Sand with some Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel			X													
wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				Wet Very Dense Brown and Gray Sand with							31-	38				
Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  22 32-53  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  28 28-26  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  11 11-15  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  10 10-40  Wet, Very Dense, Brown and Gray Sand with  Traces of Gravel																
Wet, Very Dense, Brown Sand with Traces of Clay  45  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  22 32-53  Wet, Very Dense, Brown Sand with Traces of Clay  88 28-26  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Wet, Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				,												
Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	40															
Wet, Very Dense, Brown and Gray Sand with Clay  Wet, Very Dense, Brown and Gray Sand with Clay  Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel			Х													
Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown Sand with Gravel  Wet, Wet, Wet, Medium Dense, Brown and Gray Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Gravel  Traces of Gravel			,													
Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				Wet, Very Dense, Brown Sand with Traces of Clay												
Wet, Very Dense, Brown and Gray Sand with Clay Seams  Wet, Very Dense, Brown Sand  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel																
Seams  Wet, Very Dense, Brown Sand  22 32-53  Wet, Very Dense, Brown Sand with Traces of Clay  28 28-28-26  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Gravel  11 11-15  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	45	XXX		Wet Very Desce Brown and Cray Seed with Oly							-	,				
Wet, Very Dense, Brown Sand  22 32-53  Wet, Very Dense, Brown Sand with Traces of Clay  28 28-26  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel			Х													
Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel			·													
Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Wet, Medium Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel																
Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				Wet, Very Dense, Brown Sand												
Wet, Very Dense, Brown Sand with Traces of Clay  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	50			•							2	,				
Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel			X													
Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	<u> </u>															
Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel							:									
Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				Wet, Very Dense, Brown Sand with Traces of Clay												
Wet, Very Dense, Brown Sand with Traces of Gravel  Wet, Wet, Medium Dense, Brown Sand with Gravel  Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	55										2	R				
Gravel  Gravel  Gravel  Gravel  Met, Medium Dense, Brown Sand with Gravel  OH DENSE STORY OF THE			$\triangle$													
Gravel  Gravel  Gravel  Gravel  Met, Medium Dense, Brown Sand with Gravel  OH DENSE STORY OF THE	$\vdash$															
60								ĺ								
Wet, Medium Dense, Brown Sand with Gravel  Wet, Very Dense, Brown and Gray Sand with Traces of Gravel				Gravei												
Wet, Medium Dense, Brown Sand with Gravel    11-15     11-15	au	p.a. ,	abla								1	1				
65 Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	<u> </u>	600 g	$\triangle$													
65 Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	$\vdash$	8.00		Wet Medium Dense Brown Sand with Ground												
Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	<u> </u>	လုံးတိုင် ပြော		Wet, Medidiff Defise, Brown Sand Willi Graver												
Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	65	280														
Wet, Very Dense, Brown and Gray Sand with Traces of Gravel	<u> </u>	31									1	0				
— — Traces of Gravel — — 70			$\triangle$													
				Traces of Gravei							:					
	70															
		ARKS	3: 6	" pipe casing was utilized to a depth of 4.0". Hole cay	red in to	6.0' a	t co	molet	ion c	of dr	illino	l				

						BORING NO. 2 PAGE 3 OF 3								
							DATE: August 8-9, 2005							
JOB N	AME:		Wells Bayou Str. & Apprs.		TYPE OF DRILLING: Rotary Wash									
STATI	ON	S.H. 54 20+05 EQUIPMENT: Failing 1500 w/ D										tui al	.	
LOCA			14' Left of Center Line of Construction		EQUIFM	ENI:	1			tic H			1	
					LOGGEI	BY:		Ri	cha	rd M	artin	l		
COMPLETION DEPTH: 86.5														
D E	S Y	S A												
P	M	M P	DESCRIPTION OF MATERIAL	SOIL				HT	T.I	SWC		% S	% R	
Н	ВО	L		GROUI	12	ST.		ÆIG	S	BL(	Z.	CR	Q D	
FT.	L	E S				% MOIST.	LIQUID	DRY WEIGHT	LBS PER CU.FT	NO. OF BLOWS	PER 6-IN.	Α.	D	
	-8a	\ \/	SURFACE ELEVATION: 169.1		PLAST	%		Ω	3	ž 31				
<u> </u>	0 0 0 0 0	$\triangle$								42-4				
	60 6 60 6													
	8													
75	0000 0000 0000		Wet, Very Dense, Brown and Gray to Gray Sand with Gravel							20				
<u> </u>	8,4	Д	with Graver	:						26-2				
							:							
	8 0 80 0 80 0 80													
80	0 60 0 60 0 60									40				
	လတ္တ တေတ္တ	X								19 23-1				
	80 00 00		Wet, Dense, Gray Sand with Gravel											
	og og		Wet, Delise, Gray Sand With Graver											
85	δ <b>0</b>													
	9000 9000 9000	X	Wet, Very Dense, Gray Sand with Gravel							43-6				
<u> </u>			Boring Terminated											
90														
			·											
<u> </u>														
95														
			*											
100				:							İ			
100														
105 REM	L ARKS	 3:	l 5" pipe casing was utilized to a depth of 4.0'. Hole ca	/ed in t	0.60'=	t co	mplet	ion of	dri	illing				